



Colorado Department  
of Public Health  
and Environment

# Injury Prevention Fact Sheet

## Deaths and Hospitalizations Involving Teen Drivers in Colorado

Motor vehicle crashes are the leading cause of death among U.S. teenagers. Per mile driven, crash rates among 16 to 19-year-old drivers are higher than those for all other age groups. The crash rate among 16-year-old drivers is twice as high as among 18 to 19-year-old drivers.<sup>1</sup> In Colorado, 51 percent of all deaths and 31 percent of injury hospitalizations involving 16 to 17-year-olds result from motor vehicle crashes.<sup>2</sup>

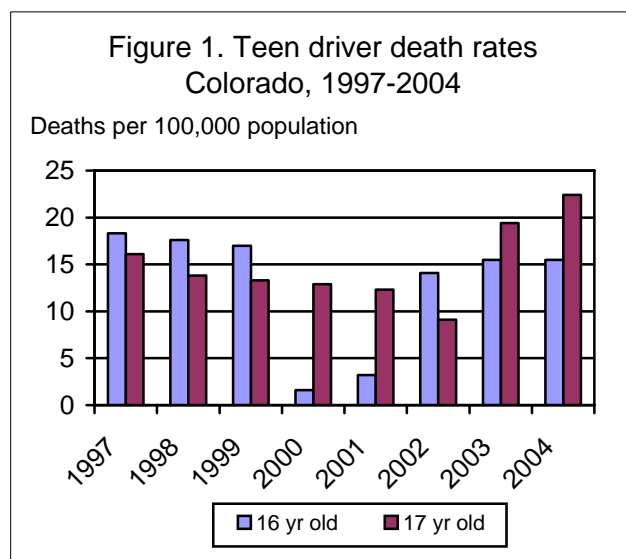
Two factors commonly mentioned to account for the high motor vehicle crash rates for young drivers are inexperience and risk taking. A recommended intervention to address this problem is graduated driver licensing, where young drivers can gain experience under controlled conditions. Colorado's graduated driver licensing provisions went into effect July 1, 1999 with additional passenger and cell phone use restrictions added in 2005.<sup>3</sup> (See [www.coteendriver.com](http://www.coteendriver.com) for more details on the law.)

### Teen Driver Deaths<sup>4</sup>

For the past 14 years, the number of 16 to 17-year-old drivers killed in motor vehicle traffic crashes in Colorado has remained relatively low with slight fluctuations from year to year (Table 1). The number of 16-year-olds who died as drivers of motor vehicles decreased in 2000 and remained low in 2001 (Table 1). However, the number of deaths returned to pre-2000 levels in 2002-2004.

	16 year old	17 year old
1991	5	4
1992	3	7
1993	10	*
1994	7	14
1995	9	9
1996	10	8
1997	10	9
1998	10	8
1999	10	8
2000	*	8
2001	*	8
2002	9	6
2003	10	13
2004	10	15

\*Fewer than 3 deaths



To compare changes over time, a more appropriate measure is the death rate (the number of deaths per 100,000 population). The death rate takes into account any changes in the population over time. For example, there were 7,597 more 16-year-olds in Colorado in 2004 than in 1998.

The death rate of 16-year-old drivers decreased significantly in 2000-2001. (Figure 1 and Table 2). However, the death rate in 2002-2004 was not significantly lower than the rate for 1994-1999. While the death rates for 17-year-old drivers appear to be higher in 2002-2004 than in 2000-2001, this difference is not statistically significant.

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	Time period	1994-1996	1997-1999	2000-2001	2002-2004
16 year olds	Number	26	30	3	29
	Rate <sup>a</sup> CI <sup>b</sup>	17.0 10.1-23.8	17.6 11.0-24.2	<b>2.4<sup>c</sup></b> <b>-0.7-5.6</b>	15.1 9.3-20.8
17 year olds	Number	31	25	16	34
	Rate <sup>a</sup> CI <sup>b</sup>	19.6 12.4-26.8	14.4 8.4-20.3	12.6 6.0-19.2	17.0 11.0-23.0

<sup>a</sup> Rates are the number of deaths per 100,000 population.  
<sup>b</sup> CI=95% confidence interval. When CIs do not overlap, the difference between rates is statistically significant.  
<sup>c</sup> This rate is significantly lower than the rates in 1994-1996, 1997-99, and 2002-04, at p<0.05

## Teen Driver Hospitalizations<sup>4</sup>

An average of 120 Colorado teen drivers ages 16 to 17 are hospitalized each year for injuries resulting from motor vehicle crashes.

Table 3. Teen drivers hospitalized for injuries due to motor vehicle crashes, Colorado residents ages 16 and 17

	Year	1997	1998	1999	2000	2001	2002	2003	2004
16 year olds	Number	67	56	72	42	56	63	42	47
	Rate <sup>a</sup>	122.5	98.7	122.3	<b>68.7<sup>c</sup></b>	89.0	98.7	<b>65.2<sup>c</sup></b>	73.1
	CI <sup>b</sup>	92.2-152.7	72.0-125.4	93.2-151.4	<b>47.1-90.2</b>	64.9-113.1	73.5-123.8	<b>44.7-85.7</b>	51.4-94.7
17 year olds	Number	61	66	71	67	79	64	61	46
	Rate <sup>a</sup>	108.8	113.8	118.4	107.9	121.6	97.1	91.1	<b>68.7<sup>d</sup></b>
	CI <sup>b</sup>	80.6-137.0	85.5-142.1	90.0-146.7	81.2-134.5	94.1-149.2	72.6-121.7	67.5-114.8	<b>48.1-89.3</b>

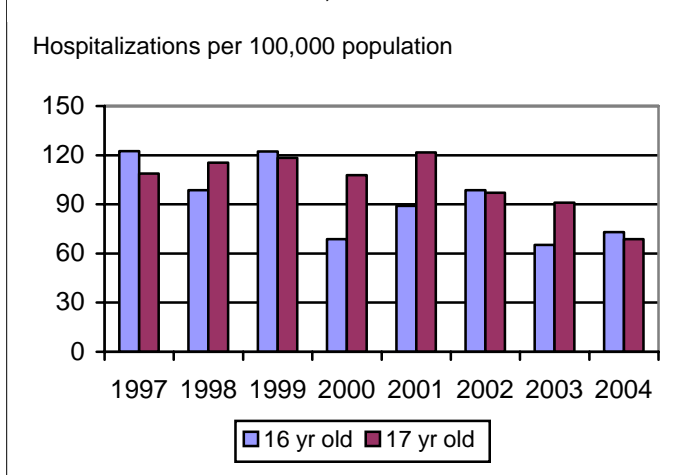
<sup>a</sup> Rates are the number of hospitalizations per 100,000 population.

<sup>b</sup> CI = 95% confidence interval. When CIs do not overlap, the difference between rates is statistically significant.

<sup>c</sup> This rate is statistically lower than the rates in 1997 and 1999, at  $p < 0.05$ .

<sup>d</sup> This rate is statistically lower than the rates in 1999 and 2001, at  $p < 0.05$ .

Figure 2. Teen driver hospitalization rates  
Colorado, 1997-2004



Teen driver hospitalization rates vary from year to year, but there is no clear trend over time. For 16-year-old drivers, the hospitalization rates in 2000 and 2003 were significantly lower than in 1997 and 1999. For 17-year-old drivers, the hospitalization rate in 2004 was significantly lower than the rates in 1999 and 2001 (Table 3 and Figure 2).

## Teen Passengers<sup>5</sup>

Teen passengers are also at risk of death and injuries when teens are drivers of the vehicle. From 2001-2003, 64 teens (ages 13 to 17) died while passengers in a motor vehicle crash. Forty-six percent of those teens were riding in a vehicle with a driver who was 16 or 17 years old.

In 40 percent of the crashes in 2001-2003 in which the teen driver aged 16 to 17 was killed, there were one or more passengers in the vehicle of the teen driver. Eighty-two percent of the passengers were teens between 13 to 19 years old, and the rest of the passengers were adults over age 19.

## Prevention Strategies

Seatbelts are known to be 45 percent to 60 percent effective in reducing the risk of fatal injury for adults.<sup>6</sup> Of the drivers ages 16 to 17 who died in 2001-2003, 48 percent were unrestrained.<sup>5</sup> Compared to other age groups, teens have the lowest rate of seatbelt use.<sup>7</sup> In 2004 in Colorado, the observed seatbelt use rate for 16 to 20-year-olds was 71 percent, compared to a use rate of 79 percent for all adults.<sup>8</sup>

Other risk factors for teen drivers include underestimating the dangers in hazardous situations; engaging in high-risk behavior such as speeding and driving after using alcohol or drugs; nighttime driving; and driver distractions, such as the presence of passengers.<sup>7,9</sup> Possible strategies to reduce teen deaths, injuries, and crashes include a combination of strong graduated driver licensing laws, enhanced enforcement of all traffic safety laws, and increased parental management of young drivers.<sup>9</sup>

## References

- <sup>1</sup> Insurance Institute for Highway Safety. (2005). Fatality Facts 2003: Teenagers. Retrieved September 2, 2005, from <http://www.hwysafety.org> (fatality facts).
- <sup>2</sup> Colorado Department of Public Health and Environment, Injury Epidemiology Program. (2005). Unpublished data.
- <sup>3</sup> Colorado Department of Transportation. (2005). News Release: Learn the Law is Message of Educational Campaign. Retrieved July 13, 2005, from <http://www.dot.state.co.us/Communications/News/OP20050628-1.htm>
- <sup>4</sup> The death numbers and rates in this section are derived from the death certificate data compiled by the Health Statistics Section at CDPHE. The death data are linked to data from the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS). The hospitalization numbers and rates are derived from hospital discharge data compiled by the Colorado Health and Hospital Association. Population data for rate calculations were obtained from CoHID at <http://www.cdph.state.co.us/cohid>
- <sup>5</sup> The data in this section come from the NHTSA FARS database at <http://www-fars.nhtsa.dot.gov>. Due to differences in case definitions and reporting, there are slight differences between the numbers reported using FARS and the numbers reported using CDPHE databases.
- <sup>6</sup> National Highway Traffic Safety Administration. (2004). Traffic Safety Facts 2003: Data-Occupant Protection. Retrieved March 4, 2005, from <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2003/809765.pdf>
- <sup>7</sup> Centers for Disease Control and Prevention. (2005). Teen Drivers: Fact Sheet. Retrieved September 2, 2005, from <http://www.cdc.gov/ncipc/factsheets/teenmvh.htm>
- <sup>8</sup> Colorado Department of Transportation. (2005). News Release: Teen Seat Belt Use in Colorado Lags Behind Adults. Retrieved February 7, 2005, from <http://www.dot.state.co.us/Communications/News/OP20050119-1.htm>
- <sup>9</sup> Foss R and Goodwin A. (2003). Enhancing the effectiveness of graduated driver licensing. *Journal of Safety Research* 34:79-84.

**Injuries are not “accidents.”**